2.2 Worksheet #2 - More Power Rule Practice

Compute the derivatives of the following functions.

(1) $f(x) = x^2 - 2$

(2) $f(x) = x - x^3$

(3) $f(x) = x^2 + 3x - 6$

(4) $f(x) = 2x^2 - 4$

(5) $f(x) = \frac{2}{x}$

(6) $f(x) = \frac{1}{x^2} - \frac{x^2}{4}$

(7) $f(x) = 2x^{10} - 4x^2$

(8) $f(x) = 3\sqrt{x}$

(9) $f(x) = x\sqrt{3}$

(10) $f(x) = \frac{x^4}{4} + x - 2$

(11) $f(x) = x(x + 1)$

(12) $f(x) = x^2 - e^2$

(13) $f(x) = 5x^3 - \frac{5}{x^3}$

(14) $f(x) = (6x + 5) - (3x + x^2)$

(15) $f(x) = 2x^2 - 5x + 10$

(16) $f(x) = x - \frac{1}{x}$

(17) $f(x) = 4x^{\frac{5}{2}}$

(18) $f(x) = 1 - 5$

(19) $f(x) = \frac{1}{3x}$

(20) $f(x) = \frac{x^2}{2} - 3x$

(21) $f(x) = 5^2$

(22) $f(x) = (x^2 + 1)^2$

(23) $f(x) = x^{1000}$

(24) $f(x) = \frac{1}{x^{1000}}$

(25) $f(x) = \frac{x^2}{\ln(2)}$

(26) $f(x) = \sqrt{3x}$

(27) $f(x) = \sqrt{7}$

(28) $f(x) = \frac{x^2-1}{x}$

(29) $f(x) = \frac{8}{\sqrt{x}} - 3x$

(30) $f(x) = \frac{7x+3x^2}{5\sqrt{x}}$

Student Name: _____ Score:

Derivatives using Power Rule

Find the derivatives using power rule:

$y = 10x^3$

$y = \frac{1}{2}x^{-2}$

$y = \frac{1}{2\sqrt{x}}$

$y = 3x^{\frac{-1}{15}}$

$y = 8x^6 + 2x^{17}$

$y = \sqrt[5]{x}$

$y = x^{\frac{1}{31}} + x^{\frac{-1}{7}}$

$y = 2x^{12} + 6x^7 + x^4$

$y = \frac{5}{3}x^3 - \frac{7}{6}x^6 + \frac{6}{4}x^8$

$y = \frac{1}{2}x^{\frac{3}{2}} - \frac{22}{7}x^{\frac{-5}{2}} + x^{\frac{3}{7}}$

Student Name: _____ Score:

Derivatives using Power Rule

Find the derivatives using power rule:

$$y = \frac{8x^5 + 4x^4}{2x^2}$$

$$y = \frac{15x^7 + 21x^5 + 12x^3}{3x}$$

$$y = \frac{-22x^{-5} - 17x^{-11}}{21x^{-4}}$$

$$y = \frac{2x^{\frac{11}{3}} + 4x^{\frac{5}{4}} - 3x^{\frac{7}{2}}}{4x^{\frac{2}{3}}}$$

$$y = \frac{7x^2 + 5x^9}{4x^7}$$

$$y = \frac{\sqrt{x} - \sqrt[3]{x}}{\sqrt[5]{x}}$$

$$y = \frac{5x^{-45} + 15x^{-4} - 5x^{-17}}{5x^{-2}}$$

$$y = \frac{5x^2 + 12x^{-5}}{\sqrt{x}}$$

$$y = \frac{\frac{2}{7}x^{\frac{-5}{11}} + \frac{16}{7}x^{\frac{-12}{11}}}{x^{\frac{-21}{11}}}$$

$$y = \frac{x^{\frac{7}{3}} + x^{\frac{10}{3}}}{\sqrt[3]{x}}$$